

# PATENT COOPERATION TREATY

## PCT


### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 28 JUN 2006

PCT

Applicant's or agent's file reference 0000055487SD		<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/EP2005/003302		International filing date (day/month/year) 30.03.2005	Priority date (day/month/year) 01.04.2004	
International Patent Classification (IPC) or national classification and IPC INV. A01N43/50				
Applicant BASF AKTIENGESELLSCHAFT				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand  15.05.2006		Date of completion of this report  23.06.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized officer  Fort, M  Telephone No. +31 70 340-4123		



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**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
  - ☐ international search (under Rules 12.3(a) and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4(a))
  - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements**\* of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-22 as originally filed

**Claims, Numbers**

1-10 filed with telefax on 15.05.2006

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* *If item 4 applies, some or all of these sheets may be marked "superseded."*

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has, within the applicable time limit:
- ☐ restricted the claims.
  - ☒ paid additional fees.
  - ☐ paid additional fees under protest and, where applicable, the protest fee.
  - ☐ paid additional fees under protest but the applicable protest fee was not paid.
  - ☐ neither restricted the claims nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with.
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
  - ☒ the parts relating to claims Nos. 1 (partially), 2-9, 10(partially) .

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-10
Inventive step (IS)	Yes: Claims	
	No: Claims	1-10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

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**Re Item IV**

**Lack of unity of invention**

In response to the invitation to restrict or pay additional fees, the applicant has amended and restricted the claims. This Authority considers that there are 4 inventions covered by the amended claims indicated as follows:

I: Claims 1 (partially), 2-4, 5-10(partially)

A synergistic herbicidal mixture comprising A) Imizamox, B) at least one herbicidal compound of the group of chloracetamides and, if desired, at least one herbicidal compound C) as defined in claim 1, a herbicidal composition comprising the same and a method of controlling undesired vegetation using the same

II: Claims 1(partially), 5-10(partially)

A synergistic herbicidal mixture comprising A) Imizamox, B) at least one herbicidal compound of the group of oxyacetamides and, if desired, at least one herbicidal compound C) as defined in claim 1, a herbicidal composition comprising the same and a method of controlling undesired vegetation using the same

III: Claims 1(partially), 5-10(partially)

A synergistic herbicidal mixture comprising A) Imizamox, B) at least one herbicidal compound of the group of tetrazolinones and, if desired, at least one herbicidal compound C) as defined in claim 1, a herbicidal composition comprising the same and a method of controlling undesired vegetation using the same

IV: Claims 1(partially), 5-10(partially)

A synergistic herbicidal mixture comprising A) Imizamox, B) quinmerac and, if desired, at least one herbicidal compound C) as defined in claim 1, a herbicidal composition comprising the same and a method of controlling undesired vegetation using the same

The common link between the 4 inventions listed above is that they all deal with synergistic herbicidal mixtures comprising an imidazolinone compound, Imizamox. This common concept linking together the 4 inventions is not novel since synergistic herbicidal mixtures

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containing a benzoylurea of formula I, acetochlor and a mixture of two imidazolinone compounds selected from a list of 6 compounds including Imizamox have been described in D8 (D8= WO 2004/008861) (see D8, p.23, l. 29-37). Thus the technical features of the common concept are not special technical features in the sense of Rule 13(2) PCT. The chemical structures of the compounds B) of the claimed synergistic herbicidal mixtures being widely different, no other technical features can be distinguished, which could possibly fulfil this requirement. Thus there is no single inventive concept underlying the different inventions and the present application lacks unity (Article 34 PCT).

Since no additional search fees have been paid, the search has been limited to the first invention identified in the invitation to pay additional fees. Consequently this report has been established in respect of the first subject identified above which corresponds to the first invention identified in the invitation to pay additional search fees wherein the compound A is Imazamox.

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: US-A-5 981 432 (HUDETZ ET AL) 9 November 1999 (1999-11-09)
- D2: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SCOTT, ROBERT C. ET AL: "Synergism of grass weed control with postemergence combinations of SAN 582 and fluazifop-P, imazethapyr, or sethoxydim" XP002347122 retrieved from STN Database accession no. 1998:515096
- D3: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; ARNOLD, RICHARD N. ET AL: "Weed control in pinto beans (Phaseolus vulgaris) with imazethapyr combinations" XP002347123 retrieved from STN Database accession no. 1994:127699
- D4: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS,

- OHIO, US; RICHBURG, JOHN S. III ET AL: "Weed management in peanut (Arachis hypogaea) with imazethapyr and metolachlor" XP002347124 retrieved from STN Database accession no. 1996:125326
- D5: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; BUHLER, DOUGLAS D. ET AL: "Weed control from imazaquin and metolachlor in no-till soybeans (Glycine max)" XP002347125 retrieved from STN Database accession no. 1989:452374
- D6: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; JOHNSON, WILLIAM G. ET AL: "Weed control with reduced rates of imazaquin and imazethapyr in no-till narrow-row soybean (Glycine max)" XP002347126 retrieved from STN Database accession no. 1998:156252
- D7: US-A-5 905 059 (FENDERSON ET AL) 18 May 1999 (1999-05-18)
- D8: WO 2004/008861 A (BASF AKTIENGESSELLSCHAFT; KIBLER, ELMAR; O'NEAL, WILLIAM, B; WITSCHERL,) 29 January 2004 (2004-01-29)

Each of documents D1 and D3-D4 discloses synergistic mixtures of metolachlor with imazethapyr or imazaquin.

The synergism of grass weed control with postemergence combinations of dimethamid and imazethapyr has been described in D2.

D5 discloses synergistic mixtures of metolachlor with imazaquin.

It is known from D6 that weed control with reduced rates of imazaquin and imazethapyr is obtained in the presence of metolachlor.

It is known from D7 that the co-application of dimethamid with imazethapyr or imazaquin results in a synergistic herbicidal effect.

The objection as to lack of novelty based on each of the documents D1-D7 is not maintained since none of the aforementioned documents discloses the use of Imizamox.

However, the subject-matter of the amended claims 1-10 lacks novelty (Article 33(2) PCT) in view of D8 which describes synergistically acting herbicidal mixtures herbicidal mixtures containing a benzoylurea of formula I, a chloroacetanilide such metazachlor, metolachlor or dimethenamid or and a mixture of two imidazolinone compounds selected from a list of 6 compounds including Imizamox (see D8, p.23, l. 29-37). It is remarked that the wording

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of the claims "comprising" does not exclude the presence of the compound A of D8.



## Claims

1. A synergistic herbicidal mixture comprising

5 A) Imazamox, including its respective isomers as well as its respective environmentally compatible salts or esters or amides or other derivatives; and

10 B) at least one herbicidal compound of the group of chloro acetamides, oxyacetamides and tetrazolinones as well as quinmerac including their respective isomers as well as their respective environmentally compatible salts or esters or amides or other derivatives

15 and, if desired,

20 C) at least one herbicidal compound selected from the group consisting of clomazone, atrazin, dichlormid, benoxacor, LAB-145138, MG-191, MON-13900, cyometrinil, oxabetrinil, fluxofenim, flurazole, naphthalic acid anhydride, fenchlorim, fenchlorazol, mefenpyr, cloquintocet (including its hydrate(s)), 1-ethyl-4-hydroxy-3-(1*H*-tetrazol-5-yl)-1*H*-quinolin-2-one, 4-carboxymethyl-chroman-4-carboxylic acid, *N*-(2-methoxy-benzoyl)-4-(3-methyl-ureido)-benzenesulfonamide, (3-oxo-isothiochroman-4-ylidenemethoxy)-acetic acid methyl ester including their respective  
25 isomers as well as their respective environmentally compatible salts or esters or amides or other derivatives.

30 2. A synergistic herbicidal mixture as claimed in claim 1 in which component B) are chloro acetamides, including their respective isomers as well as their respective environmentally compatible salts or esters or amides or other derivatives.

35 3. A synergistic herbicidal mixture as claimed in claims 1 to 2 in which the chloro acetamides, including their respective isomers as well as their respective environmentally compatible salts or esters or amides or other derivatives are selected from the group consisting of metazachlor, metolachlor and dimethenamid.

40 4. A synergistic herbicidal mixture as claimed in claims 1 to 3 in which the chloro acetamide is metazachlor including its respective isomers as well as its respective environmentally compatible salts or esters or amides or other derivatives.

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5. A herbicidal composition comprising a herbicidally active amount of a synergistic herbicidal mixture as claimed in any of claims 1 to 4, at least one inert liquid and/or solid carrier and, if desired, at least one further additive.
- 5 6. A method of controlling undesired vegetation, which comprises applying a synergistic herbicidal mixture as claimed in any of claims 1 to 4 before, during and/or after the emergence of undesired plants simultaneously or in succession.
7. A method as claimed in claim 6, used in crops.
- 10 8. A method as claimed in claim 7, wherein the crops are tolerant or resistant against the synergistic herbicidal mixture.
9. A method as claimed in claims 7 to 8, wherein the crop is brassica napus.
- 15 10. A method of controlling undesired vegetation in ALS-herbicide resistant or tolerant brassica napus, which comprises applying a synergistic herbicidal mixture comprising
- 20 A) a compound selected from the group consisting of imidazolinones, including their respective isomers as well as their respective environmentally compatible salts or esters or amides or other derivatives and B) at least one herbicidal compound of the group of chloro acetamides, oxyacetamides and tetrazolinones as well as quinmerac including their respective isomers as well as their
- 25 derivatives and, if desired C) at least one herbicidal compound selected from the group consisting of clomazone, atrazin, dichlormid, benoxacor, LAB-145138, MG-191, MON-13900, cyometrinil, oxabetrinil, flurofenim, fluroazole, naphthalicacidanhydride, fenchlorim, fenchlorazol, mefenpyr, cloquintocet (including its hydrate(s)), 1-ethyl-4-hydroxy-3-(1H-tetrazol-5-yl)-1H-quinolin-2-
- 30 one, 4-carboxymethyl-chroman-4-carboxylic acid, N-(2-methoxy-benzoyl)-4-(3-methyl-ureido)-benzenesulfonamide, (3-oxo-isothiochroman-4-ylidenemethoxy)-acetic acid methyl ester including their respective isomers as well as their respective environmentally compatible salts or esters or amides or other derivatives
- 35 before, during and/or after the emergence of undesired plants simultaneously or in succession.